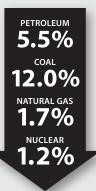
CHAPTER 5

United States Energy Use

United States Resource Energy Consumption, by Type of Fuel



In 2009, total energy consumption in the United States decreased 4.6 percent.

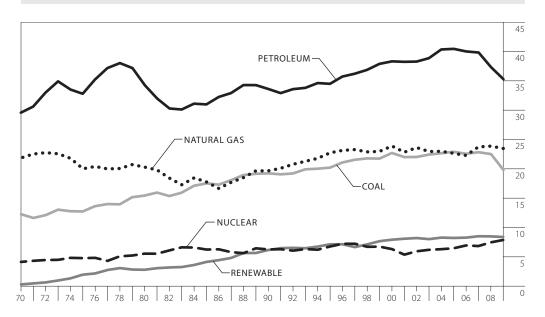


There were decreases for petroleum (5.5 percent), coal (12.0 percent), natural gas (1.7 percent), and nuclear (1.2 percent).

> RENEWABLE **5.5**%

Only renewable fuels saw an increase in consumption (5.5 percent).





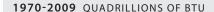
1970-2009 QUADRILLIONS OF BTU AND PERCENT OF TOTAL

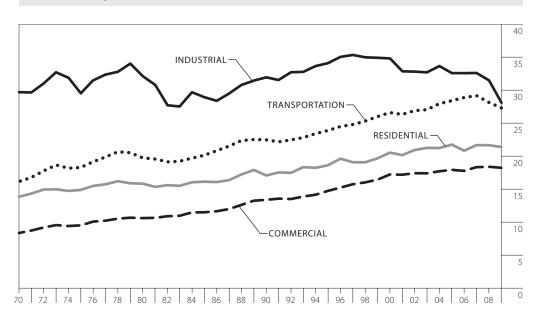
Year	Petro	leum	Natura	al Gas	Co	al	Nucl	ear	Renev	vable ^a	Total ^b
1970 ^r	29.5	43.5%	21.8	32.1%	12.2	18.0%	0.2	0.4%	4.1	6.0%	67.8
1975 ^r	32.7	45.5%	19.9	27.7%	12.7	17.6%	1.9	2.6%	4.7	6.6%	72.0
1980 ^r	34.2	43.8%	20.2	25.9%	15.4	19.7%	2.7	3.5%	5.5	7.0%	78.1
1985 ^r	30.9	40.4%	17.7	23.1%	17.5	22.8%	4.1	5.3%	6.2	8.1%	76.5
1990 ^r	33.6	39.6%	19.6	23.2%	19.2	22.7%	6.1	7.2%	6.2	7.3%	84.7
1995 ^r	34.4	37.8%	22.7	24.9%	20.2	22.1%	7.1	7.8%	6.7	7.4%	91.2
2000 ^r	38.3	38.7%	23.8	24.1%	22.6	22.9%	7.9	7.9%	6.3	6.3%	99.0
2001 ^r	38.2	39.6%	22.8	23.6%	21.9	22.8%	8.0	8.3%	5.3	5.5%	96.3
2002 ^r	38.2	39.1%	23.6	24.1%	22.0	22.4%	8.1	8.3%	5.9	6.0%	97.9
2003 ^r	38.8	39.5%	22.9	23.3%	22.4	22.8%	8.0	8.1%	6.1	6.3%	98.2
2004 ^r	40.3	40.2%	22.9	22.9%	22.6	22.5%	8.2	8.2%	6.2	6.2%	100.3
2005r	40.4	40.2%	22.6	22.5%	22.8	22.7%	8.2	8.1%	6.4	6.4%	100.5
2006 ^r	40.0	40.0%	22.2	22.3%	22.5	22.5%	8.2	8.2%	6.9	6.9%	99.9
2007r	39.8	39.2%	23.7	23.3%	22.8	22.4%	8.5	8.3%	6.8	6.7%	101.6
2008 ^r	37.3	37.5%	23.8	23.9%	22.5	22.6%	8.4	8.5%	7.4	7.4%	99.5
2009 ^p	35.2	37.1%	23.4	24.7%	19.8	20.8%	8.3	8.8%	7.8	8.2%	94.9

- a Includes net imports of electricity.
- **b** Totals vary slightly from U.S. resource consumption totals elsewhere in this publication because they do not include net imports of electricity.

Source: U.S. Department of Energy, Energy Information Administration, Monthly Energy Review, Table 1.3 [DOE/EIA-0035 (2010/03)] (March 2010). http://www.eia.doe.gov/emeu/mer Annual data at: http://www.eia.doe/gov/emeu/aer

United States Resource Energy Consumption, by Economic Sector



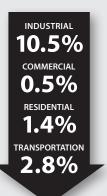


1970-2009 QUADRILLIONS OF BTU AND PERCENT OF TOTAL

Year	Resid	ential ^a	Comme	rcial ^a	Indu	strial	Transpo	rtation	Total ^b
1970 ^r	13.8	20.3%	8.3	12.2%	29.6	43.7%	16.1	23.7%	67.8
1975 ^r	14.8	20.6%	9.5	13.1%	29.4	40.9%	18.2	25.3%	72.0
1980 ^r	15.8	20.2%	10.6	13.5%	32.1	41.1%	19.7	25.2%	78.1
1985 ^r	16.1	21.0%	11.4	15.0%	28.9	37.8%	20.1	26.3%	76.5
1990 ^r	17.0	20.1%	13.3	15.8%	31.9	37.7%	22.4	26.5%	84.7
1995 ^r	18.6	20.4%	14.7	16.1%	33.9	37.2%	23.8	26.2%	91.2
2000	20.5	20.7%	17.2	17.4%	34.8	35.1%	26.5	26.8%	99.0
2001	20.1	20.9%	17.1	17.8%	32.8	34.1%	26.3	27.3%	96.3
2002	20.9	21.3%	17.4	17.7%	32.8	33.5%	26.8	27.4%	97.9
2003	21.2	21.6%	17.4	17.7%	32.6	33.2%	27.0	27.5%	98.2
2004	21.2	21.1%	17.7	17.6%	33.6	33.5%	27.9	27.8%	100.3
2005	21.7	21.6%	17.9	17.8%	32.5	32.4%	28.4	28.2%	100.5
2006	20.8	20.8%	17.7	17.8%	32.5	32.6%	28.8	28.9%	99.9
2007r	21.6	21.3%	18.3	18.0%	32.6	32.1%	29.1	28.7%	101.6
2008 ^r	21.6	21.7%	18.3	18.4%	31.4	31.6%	28.1	28.2%	99.5
2009 ^p	21.3	22.5%	18.2	19.2%	28.1	29.6%	27.3	28.7%	94.9

- a Agricultural energy use allocated between residential and commercial sectors.
- $\boldsymbol{b}\,$ Numbers may not match with previous pages due to independent rounding.
- **p** Preliminary.

Source: U.S. Department of Energy, Energy Information Administration, Monthly Energy Review Table 2. [DOE/EIA 0035 (2010/03] (March 2010). http://www.eia.doe.gov/emeu/mer/ Annual data: http://www.eia.doe.gov/emeu/aer/



During 2009, all sectors^a saw a decrease in consumption. The industrial sector saw the largest decrease (10.5 percent), while the commercial sector saw a slight decrease (0.5 percent). The residential and transportation sectors saw decreases of 1.4 percent and 2.8 percent respectively.

Sources of U.S. Crude Oil and Petroleum Products



In 2009, U.S. petroleum use decreased 4.2 percent. U.S. imports of crude oil and petroleum products decreased 9.2 percent, and imports from OPEC decreased 19.6 percent. Since 1985, U.S. consumption of petroleum products has increased almost

18.8 percent. During this same period, U.S. crude oil production has decreased 40.8 percent (lower 48 production

fell 34.7 percent). This resulted in a 131.4 percent increase in imports since 1985, with a corresponding 161.5 percent increase in imports from the Organization of **Petroleum Exporting** Countries (OPEC).

1975-2009 THOUSANDS OF BARRELS PER DAY

Year	U.S. Petroleum Use	U.S. Field Production ^a	U.S. Crude Oil Production from Oil Wells	Natural Gas Plant Liquids from U.S. Natural Gas Wells ^b	Crude Oil from Wells in Lower 48 States	U.S. Crude Oil & Product Exports	U.S. Crude Oil & Product Imports (Total) ^c	U.S. Crude Oil and Product Imports from OPEC	Imports as a Percent of U.S. Petroleum Use	OPEC Imports as a Percent of U.S. Imports	Imports as a Percent of U.S. Crude Oil Production & Imports
1975	16,322	10,007	8,375	1,633	8,183	209	6,056	3,601	37.1%	59.5%	42.0%
1980	17,506	10,170	8,597	1,573	6,980	544	6,909	4,300	39.5%	62.2%	44.6%
1985	15,726	10,581	8,971	1,609	7,146	781	5,067	1,830	32.2%	36.1%	36.1%
1990	16,988	8,914	7,355	1,559	5,582	857	8,018	4,296	47.2%	53.6%	52.2%
1995	17,725	8,322	6,560	1,762	5,076	949	8,835	4,002	49.8%	45.3%	57.4%
1996	18,309	8,295	6,465	1,830	5,071	981	9,478	4,211	51.8%	44.4%	59.4%
1997	18,620	8,269	6,452	1,817	5,156	1,003	10,162	4,569	54.6%	45.0%	61.2%
1998	18,917	8,011	6,252	1,759	5,077	945	10,708	4,905	56.6%	45.8%	63.1%
1999	19,519	7,731	5,881	1,850	4,832	940	10,852	4,953	55.6%	45.6%	64.9%
2000	19,701	7,733	5,822	1,911	4,851	1,040	11,459	5,203	58.2%	45.4%	66.3%
2001	19,649	7,670	5,801	1,868	4,839	971	11,871	5,528	60.4%	46.6%	67.2%
2002	19,761	7,626	5,746	1,880	4,761	984	11,530	4,605	58.3%	39.9%	66.7%
2003	20,034	7,400	5,681	1,719	4,706	1,027	12,264	5,162	61.2%	42.1%	68.3%
2004	20,731	7,228	5,419	1,809	4,510	1,048	13,145	5,701	63.4%	43.4%	70.8%
2005	20,802	6,895	5,178	1,717	4,314	1,165	13,714	5,587	65.9%	40.7%	72.6%
2006	20,687	6,841	5,102	1,739	4,361	1,317	13,707	5,517	66.3%	40.2%	72.9%
2007	20,680	6,847	5,064	1,783	4,342	1,433	13,468	5,980	65.1%	44.4%	72.7%
2008 ^r	19,498	6,734	4,950	1,784	4,268	1,802	12,915	5,954	66.2%	46.1%	72.3%
2009 ^p	18,686	7,196	5,310	1,886	4,665	2,026	11,726	4,786	62.8%	40.8%	68.8%

Source: U.S. Department of Energy, Energy Information Administration, Monthly Energy Review Tables 3.1, 3.3a and 3.3b [DOE/EIA-0035(2010/03)] (March 2010) http://www.eia.doe.gov/emeu/mer Annual data: http://www.eia.doe/gov/emeu/aer

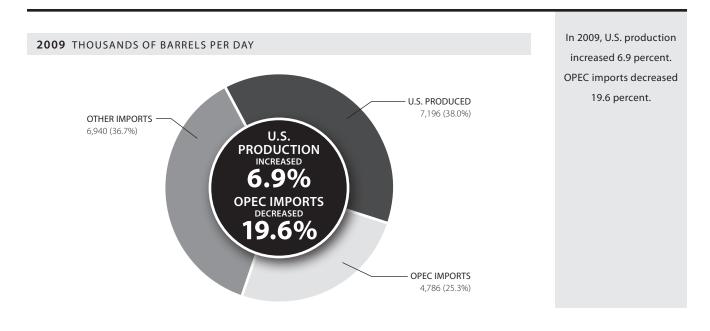
a Includes crude oil, natural gas plant liquids and a small amount of other hydrocarbons and alcohol.

b Natural gas liquids recovered from natural gas in gas processing plants and, in some situations, from natural gas field facilities.

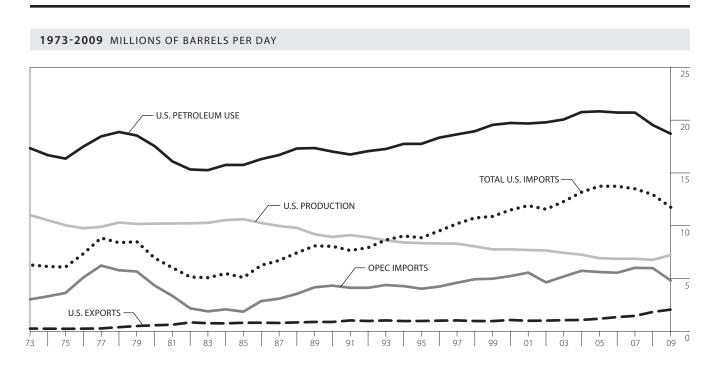
c Includes crude oil imports for the Strategic Petroleum Reserve (SPR).

p Preliminary.

2009 U.S. Petroleum Use Domestically Produced and Imported



U.S. Petroleum Use, Production, Imports and Exports



Source: U.S. Department of Energy, Energy Information Administration, Monthly Energy Review [DOE/EIA-0035(2010/03)] (March 2010).

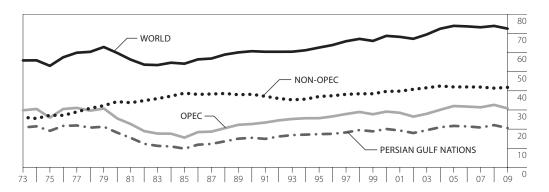
World Crude Oil Production

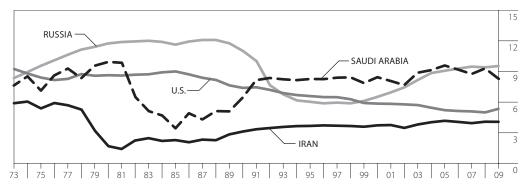
WORLD CRUDE OIL 1.9%

In 2009, world production of crude oil was 72.26 million barrels per day, a decrease of 1.9 percent from a year agod. The Organization of Petroleum Exporting Countries (OPEC) produced 42.4 percent of the world's crude oil in 2009.

The top four producers of crude oil in 2009 were Russia (13.1 percent), Saudi Arabia (11.4 percent), the U.S. (7.3 percent) and Iran (5.6 percent).

1973-2009 MILLION BARRELS PER DAY



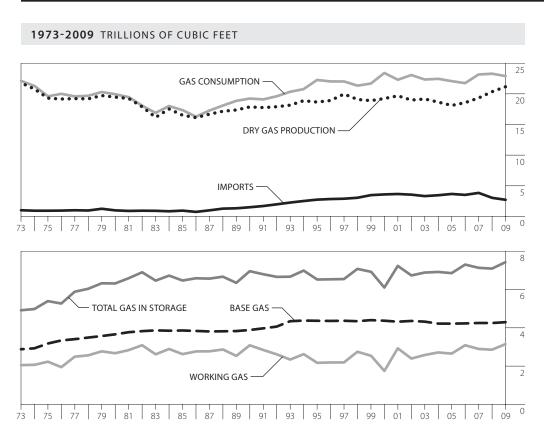


				Persian Gulf —				
Year	World	Non-OPEC	OPEC ^b	Nations ^c	U.S.	Saudi Arabia	Iran	Russia ^a
1973	55.68	26.02	29.66	20.67	9.21	7.60	5.86	8.32
1975	52.83	27.04	25.79	18.93	8.37	7.08	5.35	9.52
1980	59.56	34.18	25.38	17.96	8.60	9.90	1.66	11.71
1985	53.97	38.60	15.37	9.63	8.97	3.39	2.25	11.59
1990	60.49	38.00	22.49	15.28	7.36	6.41	3.09	10.98
1995	62.39	36.85	25.54	17.21	6.56	8.23	3.64	6.00
2000	68.50	39.52	28.98	19.89	5.82	8.40	3.70	6.48
2005r	73.72	41.85	31.87	21.50	5.18	9.55	4.14	9.04
2006 ^r	73.44	41.84	31.59	21.23	5.10	9.15	4.03	9.25
2007 ^r	72.98	41.77	31.21	20.67	5.06	8.72	3.91	9.44
2008r	73.69	41.21	32.48	21.91	4.96	9.26	4.05	9.37
2009 ^p	72.26	41.61	30.65	20.40	5.31	8.25	4.04	9.50

- a Prior to 1992, production was for the former U.S.S.R.
- b The OPEC countries include the Persian Gulf nations (with the exception of Bahrain) and Algeria, Indonesia, Libya, Nigeria and Venezuela. Ecuador rejoined OPEC in 2007 while Indonesia left OPEC at the end of 2008.
- c The Persian Gulf nations are Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, the United Arab Emirates, and the Neutral Zone.
- **d** This figure does not include oil sands or other unconventional oil sources.
- r Revised.

Source: U.S. Department of Energy, Energy Information Administration, Monthly Energy Review Tables 11.1a and 11.1b [DOE/EIA-0035 (2009/05)] (May 2009). http://www.eia.doe.gov/emeu/mer/inter.html. Annual data: http://www.eia.doe.gov/emeu/aer

United States Natural Gas Production, Imports, Consumption and Storage



	U.S. Dry Natural			Natural Gas	in Underground Storage	– Year End
Year	Gas Production ^a	Net Imports	Consumption	Base Gas ^b	Working Gas ^c	Total
1973	21.731	0.956	22.049	2.864	2.034	4.898
1975	19.236	0.880	19.538	3.162	2.212	5.374
1980	19.403	0.936	19.877	3.642	2.655	6.297
1985	16.454	0.894	17.281	3.842	2.607	6.449
1990	17.810	1.447	19.174	3.868	3.068	6.936
1995	18.599	2.687	22.207	4.349	2.153	6.502
2000	19.182	3.538	23.333	4.352	1.719	6.071
2005	18.051	3.612	22.011	4.200	2.635	6.835
2006	18.504	3.462	21.685	4.211	3.070	7.281
2007 ^r	19.266	3.785	23.097	4.234	2.879	7.113
2008 ^r	20.286	2.979	23.227	4.232	2.840	7.072
2009 ^p	21.095	2.664	22.842	4.276	3.131	7.407

- a Dry Natural Gas Production is natural gas used to heat homes and buildings, and to power industry after the natural gas liquids, such as liquid
- **b** Base Gas is the volume of gas needed as permanent inventory to maintain adequate underground storage reservoir pressures and deliverability rates during the withdrawal season.
- c Working Gas is the gas that can be withdrawn from storage to heat buildings and power industry.
- **p** Preliminary.

Source: U.S. Department of Energy, Energy Information Administration, Monthly Energy Review Tables 4.1 and 4.4. [DOE/EIA-0035 (2010/03)] (March 2010). http://www.eia.doe.gov/emeu/mer. Annual data: http://www.eia.doe/gov/emeu/aer



In 2009, U.S. natural gas consumption decreased 1.7 percent.

> PRODUCTION 4.0%

Domestic natural gas production increased 4.0 percent.

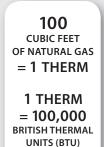


Net imports, primarily from Canada, decreased 10.6 percent.

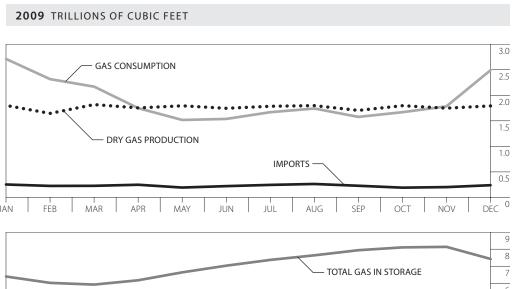
> GAS IN STORAGE **10.2%**

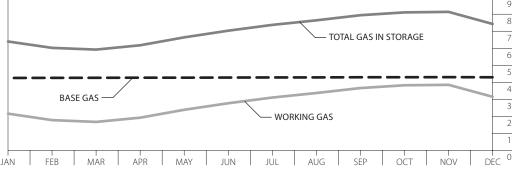
Working gasc in storage increased 10.2 percent.

United States Monthly Natural Gas Production, Imports, Consumption and Storage



Domestic natural gas production and imports remain relatively constant throughout the year. However, consumption increases significantly during the winter heating months. To provide sufficient natural gas for the winter heating months, the working gas in storage is withdrawn during these months, while natural gas is injected into storage during the non-heating months. Therefore, natural gas in storage generally peaks in October or November and is at a minimum in March.





	U.S. Dry Natural			_	Natural Gas in	Underground Storage	– Month End
2008	Gas Production ^a	Net Imports	Consumption		Base Gas ^b	Working Gas ^c	Total
January	1.794	0.247	2.704		4.236	2.141	6.377
February	1.638	0.219	2.309		4.242	1.761	6.003
March	1.811	0.221	2.162		4.246	1.656	5.902
April	1.746	0.242	1.741		4.252	1.903	6.155
May	1.787	0.187	1.510		4.253	2.367	6.620
June	1.737	0.215	1.530		4.260	2.752	7.012
July	1.778	0.239	1.662		4.266	3.086	7.352
August	1.791	0.257	1.734		4.268	3.352	7.620
September	1.697	0.222	1.570		4.278	3.643	7.921
October	1.789	0.185	1.662		4.279	3.807	8.087
November	1.741	0.196	1.776		4.284	3.833	8.117
December	1.785	0.233	2.482		4.276	3.131	7.407
Totald	21.095	2.664	22.842	Average	4.262	2.786	7.048

a Dry Natural Gas Production is natural gas used to heat homes and buildings, and to power industry after the natural gas liquids, such as liquid propane, are removed.

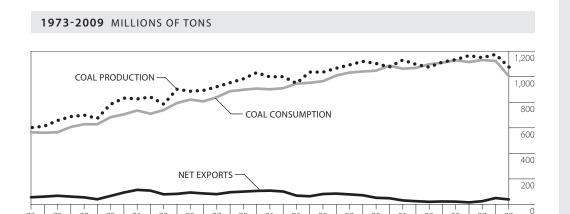
Source: U.S. Department of Energy, Energy Information Administration, Monthly Energy Review, Tables 4.1 and 4.4 [DOE/EIA-0035 (2010/03)] (March 2010). www.eia.doe.gov/emeu/mer

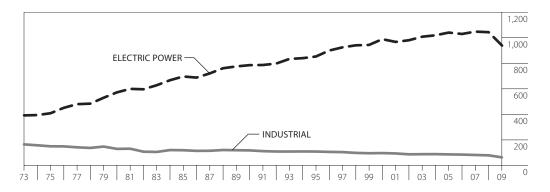
b Base Gas is the volume of gas needed as permanent inventory to maintain adequate underground storage reservoir pressures and deliverability rates during the withdrawal season.

 $[{]f c}$ Working Gas is the gas that can be withdrawn from storage to heat buildings and power industry.

d Totals may not add due to rounding.

United States Coal Production, Net Exports, Consumption and Sector Usage





					Coal Use by Sector	
Year	Coal Production	Net Exports	Consumption	Res. & Com.a	Industrial	Electric Power
1973	598.6	53.5	562.6	11.1	162.1	389.2
1975	654.6	65.4	562.6	9.4	147.2	406.0
1980	829.7	90.5	702.7	6.5	127.0	569.3
1985 ^r	883.6	90.7	818.0	7.8	116.4	693.8
1990 ^r	1,029.1	103.1	904.5	6.7	115.2	782.6
1995 ^r	1,033.0	79.1	962.1	5.8	106.1	850.2
2000	1,073.6	46.0	1,084.1	4.1	94.1	985.8
2005	1,131.4	19.5	1,126.0	4.7	83.8	1,037.5
2006	1,162.8	13.4	1,112.3	3.2	82.4	1,026.6
2007	1,146.6	22.8	1,128.0	3.5	79.3	1,045.1
2008 ^r	1,171.8	47.3	1,120.5	3.5	76.5	1,040.6
2009 ^p	1,072.8	36.5	1,000.4	3.2	60.7	936.5

a Res. & Com, represents residential and commercial.

p Preliminary.

Source: U.S. Department of Energy, Energy Information Administration, Monthly Energy Review, Tables 6.1 and 6.2, [DOE/EIA-0035 (2010/03)] (March 2010). http://www.eia.doe.gov/emeu/mer Annual data: http://www.eia.doe.gov/emeu/aer



Unlike petroleum or natural gas, domestic production of coal exceeds demand, and the U.S. is a net exporter of coal.

IN THE U.S. 93.6% OF COAL **GENERATES ELECTRIC POWER** IN WISCONSIN **GENERATED** WITH COAL

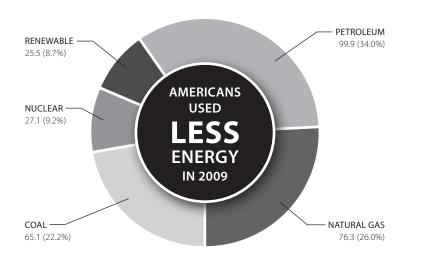
Of the coal used in the U.S., 93.6 percent goes to generating electric power, but 87.1 percent of Wisconsin's electricity is generated with coal. The Industrial sector uses 6.07 percent, with the residential and commercial sectors combined using 0.32 percent of total domestic consumption.

United States Per Capita Resource Energy Consumption, by Type of Fuel

U.S. PER CAPITA **ENERGY** CONSUMPTION

In 2009, U.S. per capita energy consumption decreased 4.9 percent.

2009 MILLIONS OF BTU AND PERCENT OF TOTAL



1970-2009 MILLIONS OF BTU AND PERCENT OF TOTAL

Year	Petro	oleuma	Natur	al Gas	Coa	al	Nucle	ear	Renew	ables ^b	Total
1970 ^r	126.1	40.3%	106.3	33.9%	59.8	19.1%	1.2	0.4%	19.9	6.3%	313.2
1975 ^r	133.2	42.3%	92.4	29.3%	58.6	18.6%	8.8	2.8%	21.9	6.9%	314.8
1980 ^r	128.0	39.9%	89.1	27.7%	67.9	21.1%	12.1	3.8%	24.1	7.5%	321.1
1985 ^r	112.8	37.1%	74.4	24.5%	73.5	24.2%	17.1	5.6%	26.0	8.6%	303.8
1990 ^r	113.9	35.8%	78.5	24.7%	76.8	24.1%	24.5	7.7%	24.9	7.8%	318.6
1995 ^r	109.9	34.1%	85.1	26.4%	75.4	23.4%	26.6	8.2%	25.2	7.8%	322.3
1996 ^r	112.1	34.1%	85.7	26.1%	78.0	23.7%	26.3	8.0%	26.6	8.1%	328.7
1997 ^r	111.7	34.3%	85.2	26.1%	78.7	24.1%	24.2	7.4%	26.3	8.1%	326.0
1998 ^r	112.8	34.8%	82.8	25.6%	78.5	24.2%	25.6	7.9%	24.1	7.5%	323.8
1999 ^r	114.5	35.2%	82.1	25.2%	77.5	23.8%	27.3	8.4%	23.9	7.4%	325.3
2000 ^r	116.0	35.1%	84.4	25.5%	80.0	24.2%	27.9	8.4%	22.2	6.7%	330.5
2001r	114.3	36.0%	79.9	25.1%	76.9	24.2%	28.2	8.9%	18.6	5.9%	317.8
2002r	113.2	35.4%	81.9	25.6%	76.1	23.8%	28.3	8.8%	20.5	6.4%	320.0
2003r	113.7	35.8%	78.9	24.8%	76.9	24.2%	27.4	8.6%	21.2	6.7%	318.0
2004 ^r	116.3	36.3%	78.3	24.4%	76.7	23.9%	28.1	8.8%	21.3	6.6%	320.6
2005 ^r	116.0	36.4%	76.4	24.0%	77.1	24.2%	27.6	8.7%	21.7	6.8%	318.7
2006 ^r	113.3	36.1%	74.4	23.7%	75.2	24.0%	27.5	8.8%	23.1	7.4%	313.5
2007r	112.3	35.5%	78.5	24.8%	75.4	23.8%	28.0	8.8%	22.5	7.1%	316.8
2008r	105.2	34.0%	78.2	25.3%	73.6	23.8%	27.7	9.0%	24.3	7.9%	309.0
2009 ^p	99.9	34.0%	76.3	26.0%	65.1	22.2%	27.1	9.2%	25.5	8.7%	293.9

a To allow a more direct comparison with Wisconsin data, this figure excludes asphalt, road oil, lubricants, waxes, petroleum feedstocks and other petroleum products not used as energy sources.

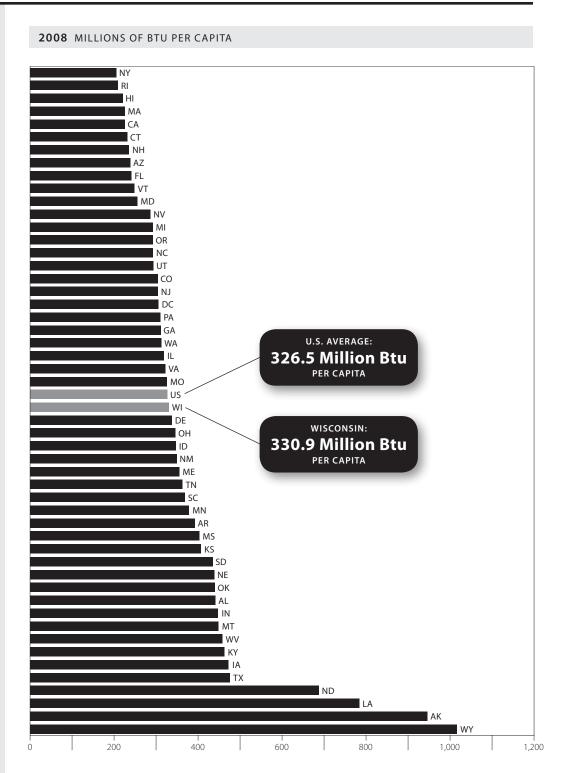
Source: U.S. Department of Energy, Energy Information Administration, Monthly Energy Review [DOE/EIA-0035 (2010/03] (March 2010), Table 1.3, http://www.eia.doe.gov/emeu/mer. State Energy Data Consumption (1997-2009), Tables 7, F8, F9 and F10, http://www.eia.doe.gov/emeu/states/~seds.html

b Renewables includes biomass, hydro power, wood, solar, wind and geothermal.

p Preliminary.

U.S. Per Capita Resource Energy Consumption, by State

In 2008, when non-energy uses of petroleum are included (such as road oil, asphalt and lubricants), Wisconsin is the 29th largest state user in the nation, including the District of Columbia, in per capita energy consumptiona. At 330.9 million BTU per capita, Wisconsin's is 101 percent of the U.S. consumption at 326.5 million BTU per capita. This is an increase of 0.33 percent over 2007 when Wisconsin's per capita consumption was 98 percent of the U.S. per capita consumption.



a Data reported in this table may differ from other tables because of different sources.

Source: U.S. Department of Energy, Energy Information Administration, State Energy Data 2008: Consumption, Table R2. http://www.eia.doe/gov/emeu/states/_seds.html

U.S. Resource Energy Consumption, by State

